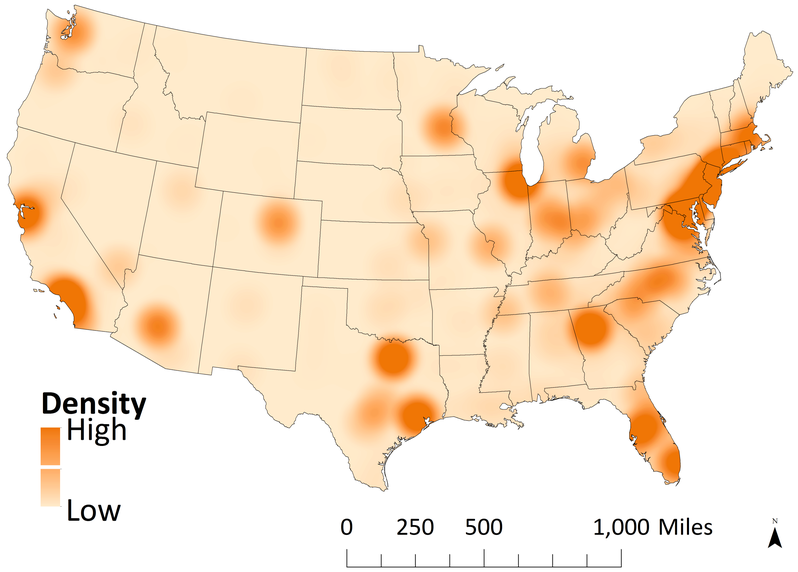
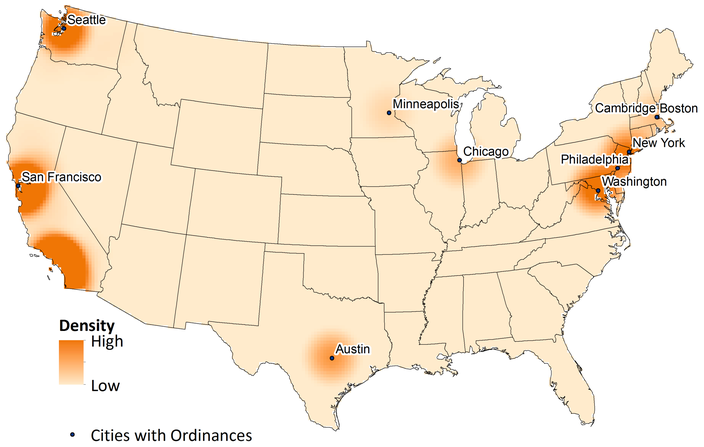
Making Real Estate Investment Trust Properties Energy Efficient

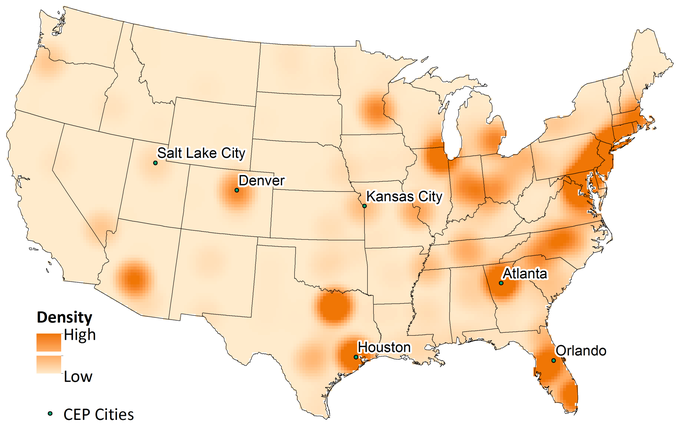
Concentrations of All REIT Properties (Map 1)



REIT Properties Covered (Map 2)



REIT Properties Not Covered (Map 3)



Project Overview

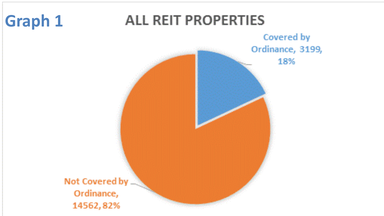
Buildings are responsible for a large amount of U.S. energy use and green house gas emissions. Real Estate Investment Trusts (REITs) hold a significant amount of commercial properties, which have high energy use intensity.

Map 1 illustrates the concentrations of all REIT properties across the U.S. At the moment only a limited number of cities have ordinances in place that require buildings to disclose their energy use and meet certain benchmarks for energy efficiency. Graph 1 illustrates that only 18 percent of REIT properties are currently covered by ordinances. Initiatives such as the City Energy Project are working with cities to implement policies that improve energy efficiency in buildings.

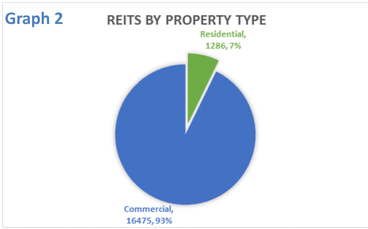
REITs have a special role to play in this initiative because they are influential private sector actors who have a lot at stake, and who could make significant gains from effective policies. It is in the best interest of REITs to have ordinances in place, because it levels the playing field. Without energy efficiency benchmarking and disclosure rules, limited information is available about building energy use. Property owners with more efficient building cannot charge tenants the appropriate premium for rent because there is no standard of comparison.

This project uses GIS technology to map where REIT properties are located, and explores the potential for REITs to be covered by future building benchmarking ordinances by examining the current coverage of REIT properties and the location and concentration of REITs not currently covered.

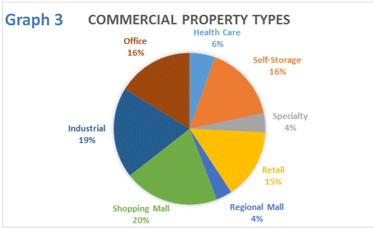
Graph 1



Graph 2



Graph 3



Methodology

The REIT property data was originally received from CoStar in spreadsheet form. Using the latitude and longitude coordinates I transformed the spreadsheet into spatial data. Using select by attribute tools I separated the data based on properties covered by existing ordinances and those that are not.

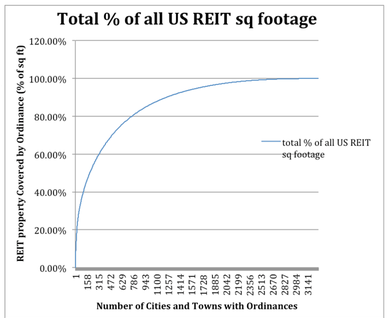
Using Kernel Density tools **Map 2 illustrates the concentrations of REIT properties already covered by benchmarking ordinances**. I used Institute for Market Transformation (IMT) data to label the ten cities with existing ordinances. In addition, California, Washington State and Montgomery County, Maryland have existing ordinances. **Map 3 illustrates the concentrations of REIT properties not covered by benchmarking ordinances**. Cities participating in the City Energy Project, which are likely to adopt ordinances in the near future, have also been labeled. **In Map 4 I illustrate the concentration of Commercial REIT properties, which are not covered by ordinances**. These make up 93% of REIT properties (see Graph 2) and use more energy than residential properties. In order to generate this map this I used select by attribute to separate commercial REIT properties from residential REIT properties. **Map 5 illustrates the distribution of office properties and health care properties not covered by ordinances**. To select these properties I used select by attribute to separate commercial properties by property type. I selected these property types because offices are one of the largest property types owned by REITs, and health care properties generally have high-energy use. Graph 3 illustrates the proportion of commercial property types owned by REITs.

I carried out some research with spreadsheet data to identify priority areas for benchmarking ordinances. **Figure 1 lists the cities with the largest amount of REIT property in terms of square footage**. These are areas where new ordinances would have the biggest impact. **Figure 2 illustrates how the percentage of total REIT property covered will increase as more cities adopt ordinances.**

Figure 1: 20 Largest Cities by REIT property (sq. ft.)

City	Total REIT Owned Property (Sq. Ft.)	Running Total % of all US REIT Property (Sq. Ft.)
New York, NY	77,510,593	2.55%
Houston, TX	65,577,057	4.70%
Atlanta, GA	48,159,133	6.28%
Orlando, FL	36,091,642	7.47%
Indianapolis, IN	28,574,428	8.41%
Phoenix, AZ	27,615,247	9.32%
San Diego, CA	27,106,780	10.21%
Philadelphia, PA	26,850,047	11.09%
Tampa, FL	26,547,487	11.96%
Austin, TX	25,903,261	12.81%
Chicago, IL	25,622,438	13.65%
Charlotte, NC	25,569,342	14.49%
Cambridge, MA	23,732,107	15.27%
Miami, FL	21,562,037	15.98%
Jacksonville, FL	20,314,962	16.65%
Dallas, TX	20,081,234	17.31%
San Antonio, TX	18,635,911	17.92%
Washington, DC	18,554,345	18.53%
Arlington, VA	17,785,314	19.12%
Los Angeles, CA	17,438,864	19.69%

Figure 2: REIT Property Exposure Over U.S. Cities



Insights

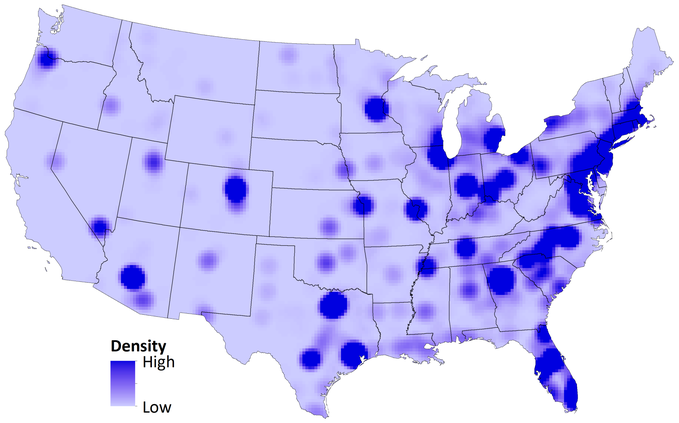
This project reveals some useful insights about the exposure of REIT properties to building benchmarking ordinances:

(1)Exposure of REIT properties to building benchmarking ordinances remains very limited.

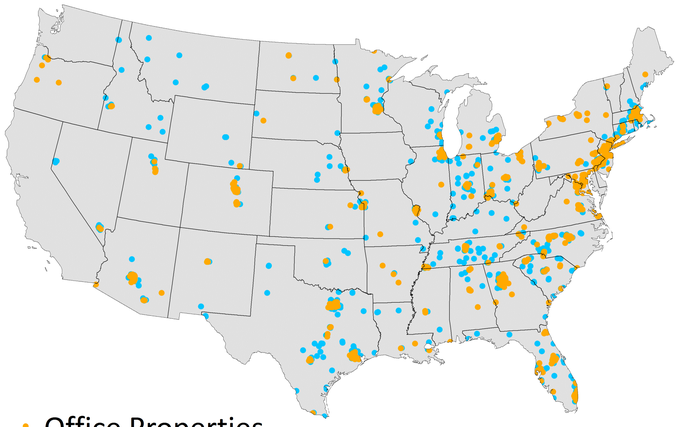
(2)Targeting commercial REIT properties with building benchmarking ordinances is likely to have the greatest impact in reducing energy use.

(3)Large cities with high concentrations of REIT properties should be targeted for benchmarking ordinances.

Commercial Properties Not Covered (Map 4)



Commercial Properties By Type (Map 5)



- Office Properties
- Health Care Properties

Poster Design and Cartography: Albert Karcher

Date: May 5, 2015

P207 GIS for International Applications

Data Sources: ESRI 2010, CoStar 2014, IMT 2014

Projection: USA Contiguous Albers Equal Area Conic

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